DOCUMENT RESUME

ED 139 412 IR 004 787

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TITLE Some Problems Involved in the Shared Cataloging Subsystem of the Ohio College Library Center.
PUB DATE 29 Apr 77
NOTE 21p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Cataloging; Libraries; Library Automation; Library Cooperation; Library Networks; *Literature Reviews; *On Line Systems; *Shared Services
IDENTIFIERS *Ohio College Library Center

ABSTRACT

This report outlines the development of the Ohio College Library Center (OCLC) and considers some basic problems in OCLC shared cataloging--e.g., the uneven quality of input cataloging and increasing number of duplicate records. Summaries of findings from an OCLC evaluative study and two surveys of shared cataloging are presented. The report points out that administrators should consider cost and computer compatibility before joining OCLC, and notes the challenge for librarians to make the most efficient and effective use of the system. A bibliography of 34 articles, videotapes, papers, manuals, books, and annual reports on OCLC is attached. (KP)

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IR004 787

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Some Problems Involved in the Shared Cataloging Subsystem of the Ohio College Library Center

The Ohio College Library Center (OCLC) is a not-for-profit corporation chartered by the state of Ohio on July 6, 1967, for the purpose of increasing availability of library resources for use in educational and research programs of Ohio colleges and universities. The principal economic goal of the center is to lower the rate of rise per student library costs, while increasing availability of library resources. OCLC has grown from forty-seven charter member institutions to eighty-eight and to a total of 700-800 participants in October, 1976. Presently, only Ohio libraries can be members, and only members can vote on policy, although participants from outside Ohio have mechanisms for expressing their wishes, and there is a possibility that eligibility for membership will be extended outside of Ohio. Participating libraries outside of Ohio link up with OCLC through regional networks ("independents"). In 1974-75, the six networks doing the largest volume with OCLC were: Southeastern Library Network (SOLINET); Five Associated University Libraries (FAUL, New York State); Pennsylvania Area Library Network (PALINET); New England Library Information Network (NELINET); and AMIGOS Bibliographic Council (in the Southwest). Representatives of the participating networks attend board meetings as non-voting observers.

Frederick G. Kilgour is the Executive Director of OCLC in Columbus, Ohio, which has 180 staff members organized into four divisions: Administration and Finance; Computer Facilities; Library Systems; and Research and Development.

OCLC has six subsystems--only the first is fully operational:

1. on-line union catalog and shared cataloging
2. serials control
3. acquisitions control
4. interlibrary loan (communication system)
5. public services
6. circulation control

(See chart A)

The on-line union catalog contains over 3,000,000 records of monographs in any Roman Alphabet, certain serials, and nonbook materials. Presently, the Cathrode Ray Terminal (CRT) cannot accomodate non-Roman alphabet materials which limits the usefulness of the union catalog, but some institutions have transliterated Cyrillic alphabet, Heberw, Arabic, Japanese and Chinese materials.

Cataloging records in the data come from three possible sources: weekly MARC (Machine Readable Cataloging) tapes from the Library of Congress, participant library conversion of L.C. copy from the National Union Catalog, or original cataloging input by a member library. However, all three are a MARC II format.

In 1974, with the increased participation of large research libraries, the non-MARC portion of the data base grew from 321,000 to 521,000 cataloging records during 1973-1974.[1] The input was almost equally divided between the current (1968 forward) period and pre-1968 dates, showing a considerable emphasis on current non-MARC cataloging, while retaining the non-MARC 1900-1967 material at about one-third the size of the total data base.[2]

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1. Brett Butler, "State of the Nation in Networking," Journal of Library Automation, 3 (September 1975), 210.

2. Ibid.

SIX SUBSYSTEMS OF OCLC

Chart A
( ) Coming System

CATALOGING	SERIALS CONTROL	ACQUISITIONS
Books	Check-in	(Search)
Serials	(Claims)	(Order)
Films	(Binding)	(Receipt)
Maps		(Claims)
Manuscripts		(Accounting)
Music		(Reports)
(Etc.)		

INTERLIBRARY LOAN	PUBLIC SERVICES	CIRCULATION
(Requests)	(Subject Search)	(Item Identification)
(Response)	(Abstracts & Indexes)	(Patron Identification)
(Overdues)	(Data)	(Loans)
(Reports)	(Bibliographies)	(Reports)
	(SOI)	Etc.
	etc.	

From uncopyrighted transparency projected by Dr. James Rush, Research & Development Director, OCLC.

Participating libraries cataloged 5,707,828 books in 1975-76 compared to 2,555,055 in the previous year, while the number of cataloging records input by participating libraries increased by only 34% continuing economies of scale.[3] Users did 86.6 percent of their cataloging using existing on-line records.[4] The Center produced 39.6 million catalog cards and supplied 147 institutions with the OCLC MARC Tape Distribution Service, whereby they automatically receive in magnetic tape, copies of catalog records they have used or input for catalog production.

During the past five years in Ohio, the percent of first-time users rose from 67.8% to 86.6%, while for the network as a whole the rise was from 72.3% to 91%.[5] The difference between the network's 91% and Ohio's 86.6% results from several causes: One cause is due to there being a higher percentage of new participants outside of Ohio than within Ohio, and it appears that when libraries are first on the system, they make a relatively greater use of records already in the system. Another cause is that some libraries are not conforming with the cooperative spirit and agreements of OCLC, so that they are doing all of their cataloging in Roman alphabets on the system. The failure to cooperate deprives others of increased access to resources and higher economies of scale.

Nevertheless, the data base is incomplete, there is a small percentage of foreign titles; the files are inconsistent, in that both LC and OCLC libraries have not always included the same data elements within records; and

3. The Ohio College Library Center. Annual Report 1975/76 (Columbus, Ohio: OCLC, 1976) p. 1.

4. Ibid., p. 2.

5. Ibid., p. 6.

there is no single authority file or cross references built into the data base. Libraries must consult their own author, subject and series authority files when cataloging monographs. Authority control is a necessary precondition to continued sharing of bibliographic data among peer libraries.

The Shared Cataloging System has not been without its problems. "Down-time" due to computer failures and poor response time during peak periods of activity and human failure has caused cataloging backlogs and lost records.

Installation of Sigma 9 computers and triple processors hopefully will keep computer response time between 3 and 12 seconds. Studies show that a searcher tends to become restless and impatient after only a seven-second wait.[6]

To fully understand the other problems involved in shared cataloging, one must understand how the OCLC system developed and how it works.

In April 1970, the first system of OCLC became operational: an off-line catalog card production system. Members sent to OCLC specially supplied IBM cards with their own Library of Congress card number assigned to the book for which catalog cards were desired. Each library provided its local call number if it was not willing to accept the LC card number. OCLC then keypunched this information and ran the request cards against the MARC II data base. Catalog cards were produced and sent to the requesting library if the records were in MARC.

On August 26, 1971, OCLC went on-line and by October 18, 1971, all members were able to input bibliographic records not available in the MARC II tapes and

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6. Ohio. State Library Columbus, The State Library Review; A Report from The State Library of Ohio 1975-76, p. 9.

thus the shared cataloging system began. Its three major functions are: (1) production of catalog cards alphabetized and ready to be filed in the public catalog, (2) making available cataloging done by one library to all other users of the system, and (3) provision for a union catalog location directory.

OCLC produces close to a million cards a week for books cataloged on the on-line system by participating libraries. Each card is custom-printed according to profiles supplied by participating libraries. Specifications for catalog cards in these library profiles are stored in OCLC's card production system, mainly in pack definition tables (PDT's). There is a great variety of options that permit each library to choose the position and format of most data elements on a card, but also enable it to choose different options for each type of entry in each individual receiving catalog.

A CRT (Cathrode Ray Terminal) resembles a television screen and a typewriter and is connected to the OCLC computers by a multiple line, multiple party, synchronous transmission telephone network. The terminal is easy to operate and an intelligent typist can be trained to do routine cataloging. To locate a cataloging record, the data base can be searched by eight index files: Author; Author/Title; CODEN (serials only); ISBN; ISSN (serials only); LC Card Number; and OCLC Number. The LC Card Number is usually the most direct search. Once the record is located that matches the monograph, it can be easily changed to fit into local cataloging practices. Also, it can be corrected using Mansell, NUC, CIP, etc, although the original record on the screen will remain permanent. Up to 225 cards for each title can be produced matching the library's PDT and sent alphabetized and ready to file in the public catalog within five to ten days.

Records can be saved on-line for ten days when more information is needed and updated to add to an "archival computer tape" which is an on-line shelflist

of a library's holdings.

The entire reclassification of a library's collection can be done on-line by following procedures and receiving approval of OCLC.

If there is no previous record on-line, a professional cataloger can fill out a workform and fill in all the tags and the indicators and the subfield codes to each field. A field is an element of new information. The main entry is a field and the dates of birth and death form the date subfield of a personal name or added entry. Inputting original cataloging records also cuts library costs. A library pays a first time use charge when it uses an on-line record, and there is no charge for inputing a record.

Participants' contracts generally require that they input all their Roman alphabet cataloging that cannot be found in the data base. There is no way OCLC can determine if a participant is complying with this obligation. A library performing input cataloging must maintain certain basic cataloging standards. These standards are spelled out in great depth in On-Line Cataloging which will be revised in six months. For input cataloging to be useful to other libraries, it should require a minimum of checking and changing. Unfortunately, the quality of input cataloging is uneven. Not all libraries follow the cataloging standards, keep up with Library of Congress subject headings and classification schedule changes, and revisions of Anglo-American Cataloging Rules. Also, many earlier records are incomplete.

Large libraries who try to maintain an up-to-date public catalog by keeping up with AACR revisions, classification and subject heading changes, will usually not accept on-line cataloging that is more than three years old.

It is also interesting to note that one library that this writer visited had a "good guys list" that consisted of member institutions whose cataloging

was acceptable and another library had a "blacklist" of notorious members whose cataloging was consistently poor.

Also, there has not been much information written in the literature about members' responses to cataloging quality; perhaps this is due to the enthusiasm of members towards the system and/or the reluctance of participants to make their opinions known.

In evaluating the quality of cataloging, one must realize that OCLC has never promised quality cataloging. OCLC is an on-line union catalog and the quality of the records are no better or no worse than the entries in The National Union Catalog. It is the responsibility of member network participants to consciously follow the rules and policies. Also, catalogers are human and do sometimes make mistakes, and the nature of descriptive cataloging, particularly subject heading assignment, is very subjective. The screen does display the origin of the cataloging and the work of an institution becomes a public record for everyone to scrutinize, and this does put catalogers and their respective institutions in an awkward position.

OCLC and their network affiliates have been severly criticized at membership meetings for not maintaining quality control of input records. The Advisory Committee on Cataloging and Library Systems Division which develops the standards and procedures has been concerned with the number of duplicate records. There has been some discussion about assigning a "Level K" to libraries who consistently input poor records and having their records checked and upgraded by others. The problems are quite clear: which libraries should receive a "Level K" and what libraries should correct and/or update the records? Furthermore, this practice opens the door to poor public relations and conflicts among members.

Participants can accept, change, and/or update records to meet their individual cataloging practices. Perhaps the flexibility of the system compensates for and causes problems too.

The shared cataloging system does have a policy for correcting records. The records in the data base can not be changed on-line, and participants by following a prescribed policy can have records corrected at OCLC by sending an ERROR REPORT SHEET with appropriate photocopies to the Center or an affiliate network. The library that made the error is phoned and asked for permission to change their input record; once permission is granted the record is changed at headquarters. Therefore, all members of the system can correct one another's mistakes, but it is also the responsibility of each institution to report errors.

The center has implemented a program that allows libraries to correct their own input records on-line if no other library has used the record.

The Library Systems Division of OCLC corrected 11,130 individual errors in member input records, forwarded to the Library of Congress 2,480 reports of errors in MARC II records and upgraded 1,426 input records from Library of Congress cataloging copy supplied by participants in 1975-76.[7]

Booklist uses OCLC cataloging data for it "supplies information for a more complete and up-to-date bibliographic record of current publications.[8] Acquisitions departments have found the data base to be more current and accurate than Books In Print.

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7. The Ohio College Library Center, Annual Report 1975-76, p. 6.

8. A quote from John B. Borsnahan, Booklist Cataloger, in OCLC Newsletter 93 (January 14, 1976), p. 2.

Libraries have complained about the increasing number of duplicate records in the data base. The OCLC cataloging sub-system currently supports two techniques for creating a new record to be added to the data base: 1) generation of a record from a workform and 2) automatic computer generation of a new record when certain editing changes are made to a record already in the data base. The latter technique has proven to be deficient in the following ways: 1) an operator may make editing changes to an existing record that cause the algorithm in the system to generate a new record even though the edited record does not constitute a unique data base record, thus, an unwanted duplicate is added to the data base; 2) the operator may not be able to make editing changes that cause the algorithm to generate a new record, even though the edited record describes an item unique to the data base, thus, the library's holding symbol is linked to the wrong work and the new record is not added; 3) the operator cannot be certain whether a new record will be generated when an existing record is edited. Because of these deficiencies, a manually controlled technique is used to replace the algorithm for automatic generation of new records from existing records. Duplicate records are also caused by incorrect searching. OCLC responded to this problem by implementing a new procedure that will automatically process deferred records (MARC II), reduce the number of duplicate records in the on-line catalog, and ultimately reduce to a point of elimination the inputting of duplicate records.

The practice of examining and accepting current Library of Congress cataloging (MARC II) was a department policy in two out of the four libraries visited.

When the Center activates its public service mode, local call numbers will be on-line to help users locate titles in the individual libraries.

An evaluation of OCLC done by Westat Research Incorporated for IUC (presently Amigos Bibliographic Council) revealed the following findings:[9]

Academic Library findings

The average time spent inputting a cataloging record declined over the period of the study.

The average time spent on the average acquisition search on the terminal declined over the period of the study.

Small libraries used the terminals for more purposes than routine cataloging than did the larger libraries.

Revision rates and time spent per record produced was highest in medium-sized libraries.

There was a radical decrease in routine cataloging using other than OCLC records.

Large libraries processed twice the number of items per terminal on the average than small libraries.

Large Texas libraries experienced a 50% increase in monographic cataloging production.

Small libraries experienced significant decreases in activities involved with routine and original cataloging.

Large libraries had increases in original cataloging.

Medium-sized libraries experienced fewer effects from the OCLC operation than the small or large libraries.

A shift from professional to support staff using terminals during the latter months of the study was indicated.

Cataloging from OCLC records was 78% of all volumes processed for the New Mexico libraries.

Original cataloging increased by 45% for the New Mexico libraries.

Routine cataloging activities were reduced in the New Mexico libraries.

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9. Westat Research Inc., Final Report: IUC/OCLC Network Evaluation. Rockville, Maryland, 1975. ERIC Document ED 115 288.

Original cataloging of monographs decreased over the period of the study.

Overall cataloging staff costs decreased over the period of the study.

Public Library findings

84% of all volumes processed on the terminals were from OCLC records.

26% of all records found required classification or other major revision.

Only 6% of all records found were acceptable without revision.

The per title unit cost was significantly lower using the OCLC processing rather than the manual processing in the parallel operations at Dallas Public Library.

The findings of Westat, Inc. were presented above in a cursory fashion and libraries that are anticipating joining OCLC should review the entire report for more complete information.

Joseph Nitecki, Associate Director for Technical Services, Temple University Libraries did a survey of the pros and cons of OCLC shared cataloging at Temple University Library, Philadelphia, Pennsylvania, by making direct comparisons of manual and automated processes which is very difficult.[10] He found that quite often a given advantage for one method is a disadvantage for the other. By comparing searching activities, editing, catalog card production and reproduction, processing problems, and cataloging problems of both systems, Nitecki found OCLC has a clear advantage in all but one task; the preparation of instructions is lower in original cataloging since it involves a full, field-by-field transcription of bibliographic data for keying-in purposes. Revision processes were similar in both operations and card production was the fastest the best with OCLC.

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10. Joseph Nitecki, OCLC in Retrospect: A Review of the Impact of the OCLC System on Administration of Large University Technical Services Operation. Philadelphia, Pennsylvania: Temple University Libraries, 1974. ERIC Document ED 087 042.

Joe Hewitt, Director, University of North Carolina Library, Chapel Hill, North Carolina, did a 1974 survey that was reported in the May 1976 American Libraries. Mr. Hewitt visited forty-seven charter members in Ohio for first-hand interviews and observations to back up OCLC data gathered in questionaires. The following is a brief summary of findings that pertain to the shared cataloging system:

> Mean find rate for the first on-line search with books in hand was determined to be 74%.
>
> The primary factor determining work hours, personnel utilization, and methods of interface, is the classification system used.
>
> The mean rate for cataloging with records in the data base for 36 libraries is 14.3 titles per hour.
>
> 85% of the interviewees reported that use of the system had not made problems of catalog integration more severe.
>
> Dewey libraries had to make more modifications to interface with OCLC.
>
> Dewey libraries require extensive professional involvement in routine cataloging, while in LCC libraries, professionals were freed to do original cataloging.
>
> Interviewees in 93% of the libraries judged on-line cataloging to be superior to their previous cataloging methods.
>
> Majority of libraries adequately staffed prior to use of system should find it possible to decrease size of staff.
>
> OCLC has been remarkably successful in meeting a wide variety of the percieved needs of individual libraries.[11]

OCLC is more than a cataloging and card production service; it represents a general bibliographic resource which can support a variety of library functions. The Center does not conceive of its mission as merely the mechanization

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11. Joe Hewitt, "The Impact of OCLC," American Libraries (May, 1976), 268-275.

of library procedures of past, but as a revolutionary force that will make resources more available to users of libraries, by bringing about changes in traditional library practices.

This attitude is reflected in the following objectives for the Center, adopted by the OCLC Board of Trustees:

1. To increase location information and availability of participating library resources to users;
2. To furnish users and libraries with information when and where they need it;
3. To enable libraries to give personalized service;
4. To lower the rate of rise per unit costs;
5. To provide management information;
6. To create and make available new and improved library operational procedures.[12]

The first question that an administrator would ask about this revolutionary system is "How much is this thing going to cost me?" Surprisingly enough, there have been no meaningful cost studies published in the literature: The Barbara Markuson study shows many libraries did no cost studies before joining OCLC. Who will pay the bills? Will library patrons have to pay for services and use of materials? Although costs for technical services have been traditionally hard to arrive at, the lack of comparative data makes one suspicious, particularly when one considers the thousands of dollars grant money and state aid the Center has received.

Libraries have come to be dependent on OCLC for greater cataloging

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12. OCLC Newsletter 65 (January, 1974) p. 1.

efficiency and for its on-line union catalog of approximately twelve million locations of resources. It exists today because one million person hours have gone into the creation of its data base. OCLC has a $15 million budget plan for 1976-77 to perfect and innovate the on-going systems. The system is growing at its present rate, a rate that is approaching 10 million items/year cataloged on the system; 1 million new records/year added to the base; and 60 million catalog cards produced/year, surpassing the Library of Congress phased-down card sales.[13]

The potentials and flexibility of OCLC are great, but will libraries be able to afford the present and future subsystems? There has been some speculation in the literature that per unit cataloging costs will decrease in the future. Will libraries be able to afford their local cataloging practices that OCLC so graciously accomodates without examining and changing certain "pet practices" that may not be economically feasible? Possibly all technical services could be done at one central location for area libraries like the Colorado Academic Libraries Book Processing Center. Will the public card catalog give way to OCLC terminals? Is the Library of Congress planning to close their public catalog?

OCLC libraries are worried about computer compatibility because the Beehive Terminal (CRT) cannot accomodate communications between libraries, necessary for the planned interlibrary loan subsystem. The lack of standardization and compatibility between bibliographic and computer networks and other data bases, hinders resource sharing. Headquarters has ten

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13. Art Plotnik, "OCLC for You--And Me?! A Humanized Anatomy for Beginners." American Libraries, 7 (May 1976), 263.

million dollars worth of equipment and the participant libraries have 1400 CRT's. Also, libraries can use a teletype to interface with OCLC.

Changes and improvements are occuring so rapidly, librarians are having problems keeping up with the system. Audiovisual materials are on-line and serials are still being inputted. The day is coming soon when patrons will be able to go on-line and order materials through the computer. Public service terminals are presently available for public use in some public and university libraries.

In the future, just imagine sitting at a terminal ordering all formats of media and waiting and waiting for the postman to deliver it. Fast and efficient delivery systems must be devised to facilitate interlibrary loans and speed up catalog card deliveries.

The challenge for librarians is to make the most efficient and effective use of OCLC, for this system is probably the beginning of the national central bank of bibliographic data that is long overdue.

For more information one should read Barbara Evans Markuson's "Ohio College Library Center System: a study of factors affecting the adaptation of libraries to on-line networks", Library Technology Reports 12 (January, 1976): 11-132, Joe Hewitt's OCLC: Impact & Evaluation, Ohio State University Library, 1976, and Joseph Z. Nitecki's OCLC in Retrospect: A Review of the Impact of the OCLC on Administration of Large University Technical Services Operations" ERIC Document ED 087 042.

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